In the Drawing

Attachment: Replacement Sheet(s)

Annotated Sheets Showing Changes

One New Sheet Containing Figure 11

Remarks

Claims 1-79 were pending in the application, with claims 1-4, 31, 32, 53 and 54 rejected, claims 5-15, 33-52 and 55-59 objected to, and claims 16-30 and 60-79 allowed. The drawing and specification were also objected to. Claim 53 has been amended, as has been the drawings and specification. In view of the amendments and the following remarks, reconsideration of the application is respectfully requested.

Response to Drawing and Specification Objections

Applicant apologizes for the large number of clerical and typographical errors appearing in the specification and drawing as filed, and thanks the Examiner for the thorough review of the application for such errors. In each case identified by the Examiner, Applicant has attempted to address the issue by amending the pertinent figure, modifying the corresponding textual section of the specification, or both, as shown in the marked-up figures and specification amendments transmitted herewith. Applicant respectfully submits that the amendments address all issues raised by the Examiner without adding new matter to the application.

With respect to Figure 11, Applicant has reviewed the drafting attorney's file and determined that the formal Figure 11 drawing was lost somewhere between the draftsman and the attorney, and was therefore inadvertently not filed with the application. Applicant has obtained Figure 11 as originally prepared by the draftsman and has submitted that figure herewith. Applicant notes the thorough description of the subject matter of Figure 11 as contained on page 21, line 4 to page 23, line 6, including the statement at page 21, lines 5-6 to the effect that Figure 11 combines features from Figure 7 and 10A, which were transmitted with the original application. In view of the thorough textual description of the subject matter of Figure 11 and the fact that the salient elements of Figure 11 are also shown in other figures, Applicant respectfully submits that Figure 11 contains no new matter. Applicant respectfully requests that Figure 11 as submitted be added to the application.

The Examiner also required a new title for the application. Applicant proposes the title "SYSTEM AND METHOD FOR DISTRIBUTING PACKETS AMONG A PLURALITY OF PATHS TO A DESTINATION," and respectfully submits that the proposed title is indicative of the claimed invention.

Response to Claim Rejections

Claims 1-4, 31, 32, 53, and 54 were rejected under 35 U.S.C. § 102(b) as anticipated by Bakke et al. (U.S. Patent No. 5,566,170). Applicant respectfully traverses this rejection and submits that Bakke fails to teach or suggest all elements on any rejected claim.

With respect to claims 1-4, claim 1 requires in part "a multiplexer operable to obtain information of a next-hop transfer of the received data by selecting from amongst a plurality of next-hop designations; separate fields of the plurality of the second table to originate at least two of the next-hop designations." The rejection states that these requirements are disclosed at Bakke Figure 2 element 130 and column 9 lines 46-51, and column 21 lines 43-48. Element 130 of Bakke, although confusingly misnamed as a multiplexer, is actually a classical packet *de*multiplexer by description "which periodically clocks bits of information (i.e. protocol data units 140') out of memory buffer 106 to appropriate memory buffers 132, 134, 136, and 138 which are connected to outbound lines to the communication network." (Bakke, col. 9, ll. 46-51.) Demultiplexer 130 thus is not "operable to obtain information of a next-hop transfer of the received data by selecting from amongst a plurality of next-hop designations" as claimed—the next-hop designation has been fixed prior to demultiplexer 130, which merely sends the PDU to the "appropriate memory buffer" for its outbound line.

Furthermore, Bakke does not describe a second table "to originate at least two of the next-hop designations." The Bakke excerpt at column 21 describes portions of "receive information 142" (which is not a table addressed by the output of the first table) that is added to each PDU, but does not describe the forwarding table from the column 14-15 excerpt as having separate fields to originate different next-hop designations in the receive information.

These same deficiencies also affect the additional limitations of claims 2-4, as they apply to the multiplexer and field relationships of the next-hop designations.

With respect to claims 31 and 32, Bakke fails to disclose "a second table comprising a plurality of selectable entries to be output dependent upon the points output by the content addressable memory; the second table output comprising a plurality of data fields; a first data field of the plurality comprising a plurality of sub-fields; at least a first plurality of the selectable entries of the second table comprising ID values for at least one sub-field of the first data field." Bakke merely discloses "a forwarding table" without describing the table as having the claimed format. As an indication that Bakke uses a CAM-

based approach instead, Bakke column 10 discloses using the CAM, not the second table, to obtain "various addresses required by the preprocessor."

Furthermore, as discussed above regarding claim 1, the Bakke demultiplexer is not a multiplexer. It does not even connect to a second table, so it cannot "select one of the sub-fields of the first data field of the output of the second table to obtain an ID value."

Regarding claims 53 and 54, claim 53 has been amended to clarify what is claimed. Claim 53 now recites "determining a number of available forwarding paths associated with the destination address, wherein for at least one destination address the number of available forwarding paths associated with the destination address is greater than one; and when the number of available forwarding paths is greater than one, transferring the received data to select ones of the number of forwarding paths." Bakke column 10 describes various address comparisons that "can be" made using CAM 128, but fails to disclose determining a number of available forwarding paths associated with the destination address as part of the operation of Bakke.

The cited sections of Bakke also fail to teach that "the select ones of the paths [are] determined by a distribution algorithm that distributes path utilization across the available forwarding paths," as claimed.

Applicant respectfully submits that Bakke fails to teach all elements of any rejected claim, and therefore Applicant requests withdrawal of the rejections based on Bakke.

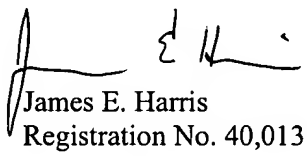
Response to Claim Objections

Claims 5-15, 33-52, and 55-59 were objected to as allowable but dependent upon a rejected base claim. In view of the arguments presented above for the base claims, Applicant has elected not to rewrite the objected-to claims at the present time.

Conclusion

Applicant acknowledges the allowance of claims 16-30 and 60-79, and respectfully requests allowance of claims 1-15 and 31-59.

Respectfully submitted,



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on June 7, 2006
Date

Susan C. Lien

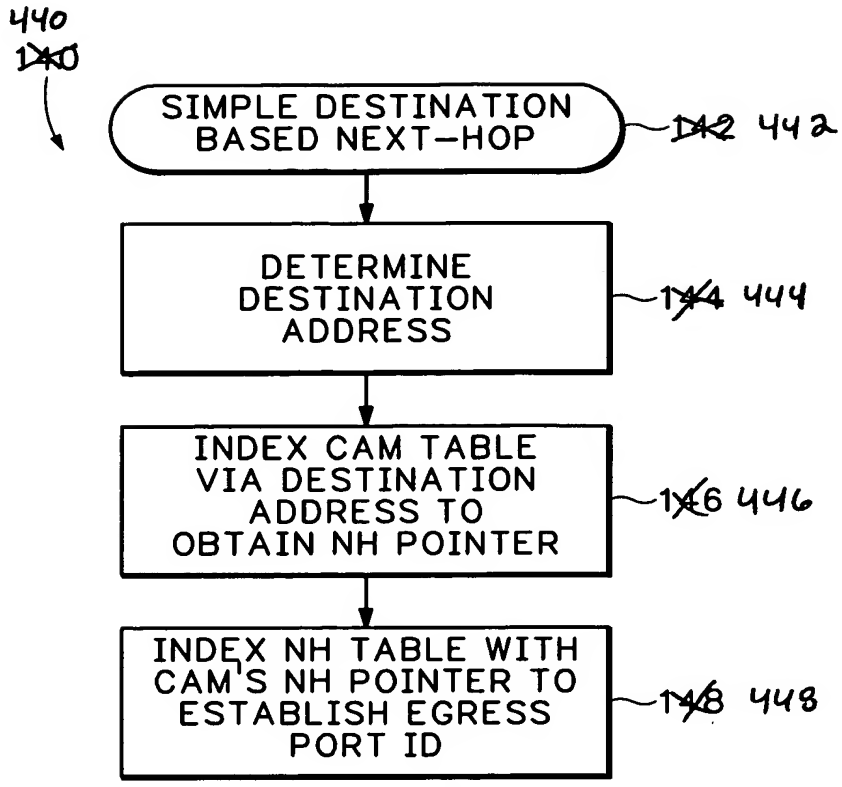

440
SIMPLE DESTINATION BASED NEXT-HOP
442
DETERMINE DESTINATION ADDRESS
444
INDEX CAM TABLE VIA DESTINATION ADDRESS TO OBTAIN NH POINTER
446
INDEX NH TABLE WITH CAM'S NH POINTER TO ESTABLISH EGRESS PORT ID
448

FIG.4

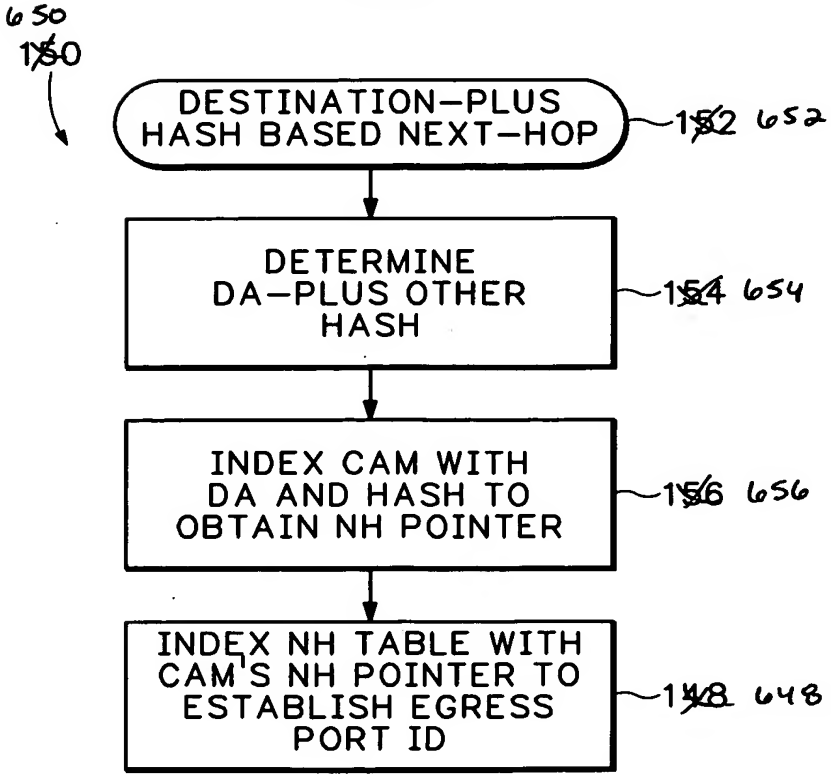
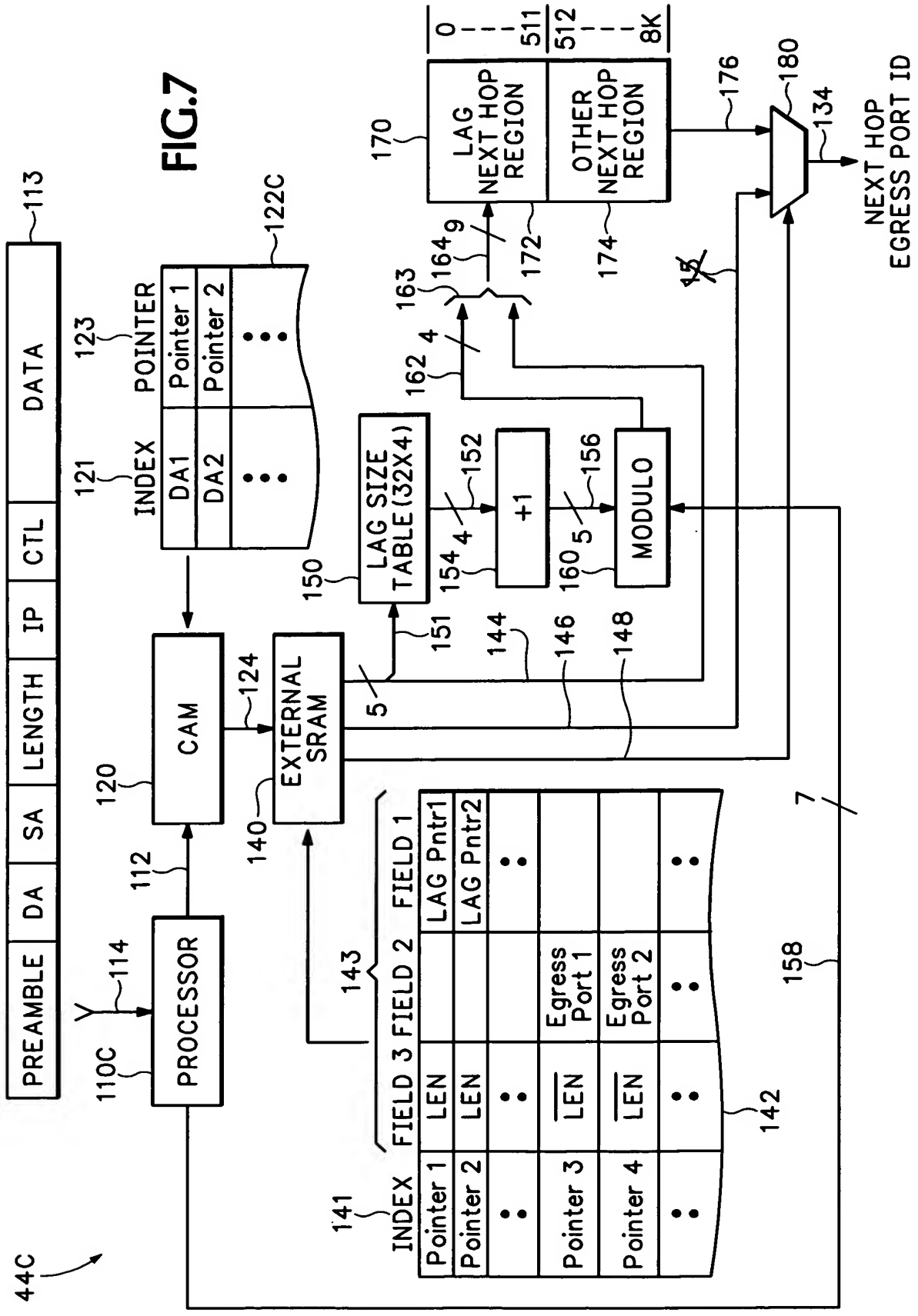

650
DESTINATION-PLUS HASH BASED NEXT-HOP
652
DETERMINE DA-PLUS OTHER HASH
654
INDEX CAM WITH DA AND HASH TO OBTAIN NH POINTER
656
INDEX NH TABLE WITH CAM'S NH POINTER TO ESTABLISH EGRESS PORT ID
648

FIG.6

FIG.7


PREAMBLE
DA
SA
LENGTH
IP
CTL
DATA
113
INDEX
POINTER
Pointer 1
Pointer 2
DA1
DA2
121
123
122C
CAM
120
124
EXTERNAL SRAM
140
112
PROCESSOR
114
110C
LAG SIZE TABLE(32X4)
150
151
144
146
148
154
152
+1
156
160
MODULO
162
163
164
9
LAG NEXT HOP REGION
OTHER NEXT HOP REGION
170
172
174
176
180
134
NEXT HOP EGRESS PORT ID
0
511
512
8K
INDEX
FIELD 1
FIELD 2
FIELD 3
LAG Pntr1
LAG Pntr2
Egress Port 1
Egress Port 2
LEN
Pointer 1
Pointer 2
Pointer 3
Pointer 4
141
142
143
158
7
44C

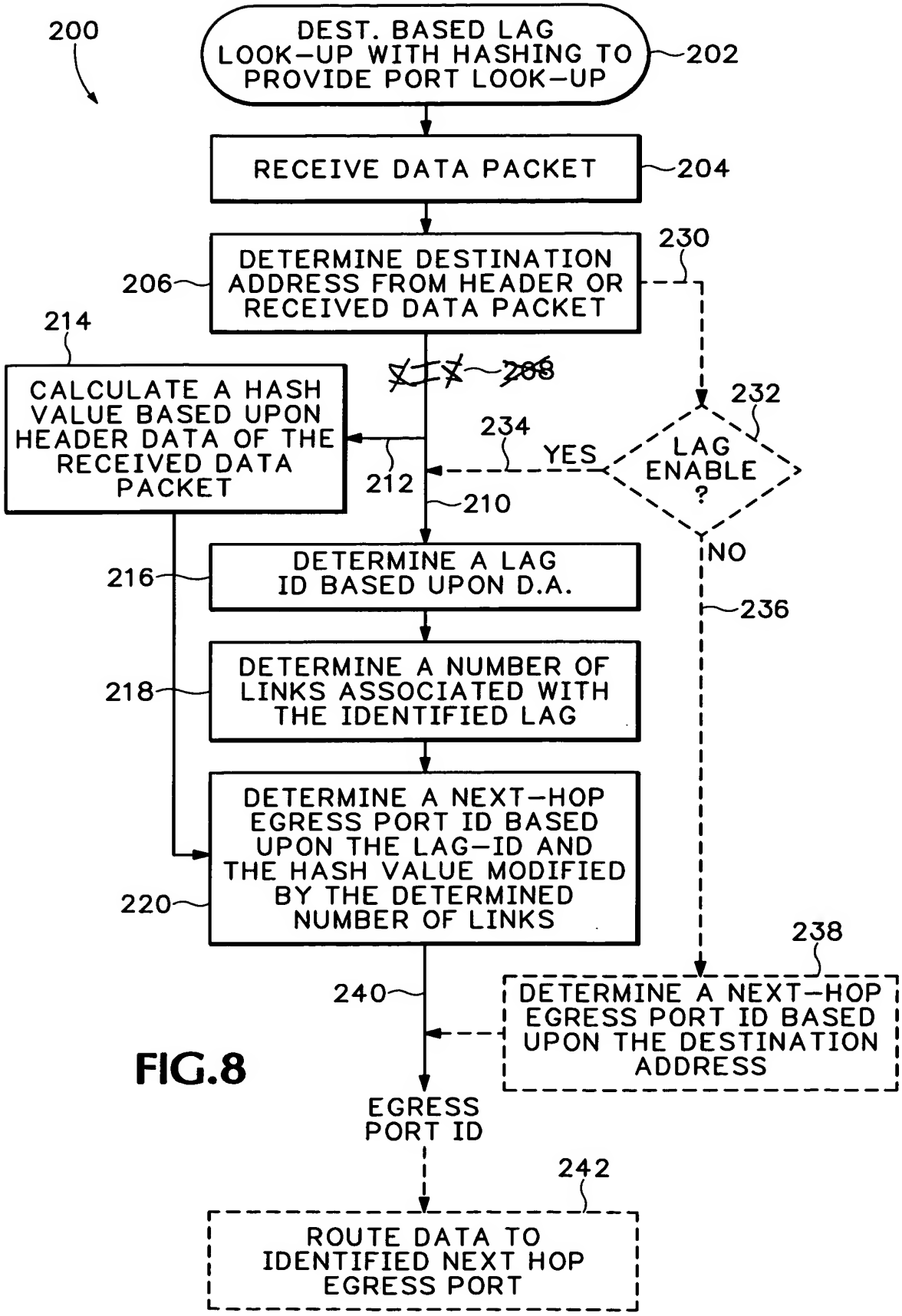

200
DEST. BASED LAG LOOK-UP WITH HASHING TO PROVIDE PORT LOOK-UP
202
RECEIVE DATA PACKET
204
DETERMINE DESTINATION ADDRESS FROM HEADER OR RECEIVED DATA PACKET
206
230
214
CALCULATE A HASH VALUE BASED UPON HEADER DATA OF THE RECEIVED DATA PACKET
208
232
234
YES
LAG ENABLE ?
212
210
NO
216
DETERMINE A LAG ID BASED UPON D.A.
236
218
DETERMINE A NUMBER OF LINKS ASSOCIATED WITH THE IDENTIFIED LAG
220
DETERMINE A NEXT-HOP EGRESS PORT ID BASED UPON THE LAG-ID AND THE HASH VALUE MODIFIED BY THE DETERMINED NUMBER OF LINKS
238
240
DETERMINE A NEXT-HOP EGRESS PORT ID BASED UPON THE DESTINATION ADDRESS
EGRESS PORT ID
242
ROUTE DATA TO IDENTIFIED NEXT HOP EGRESS PORT

FIG.8

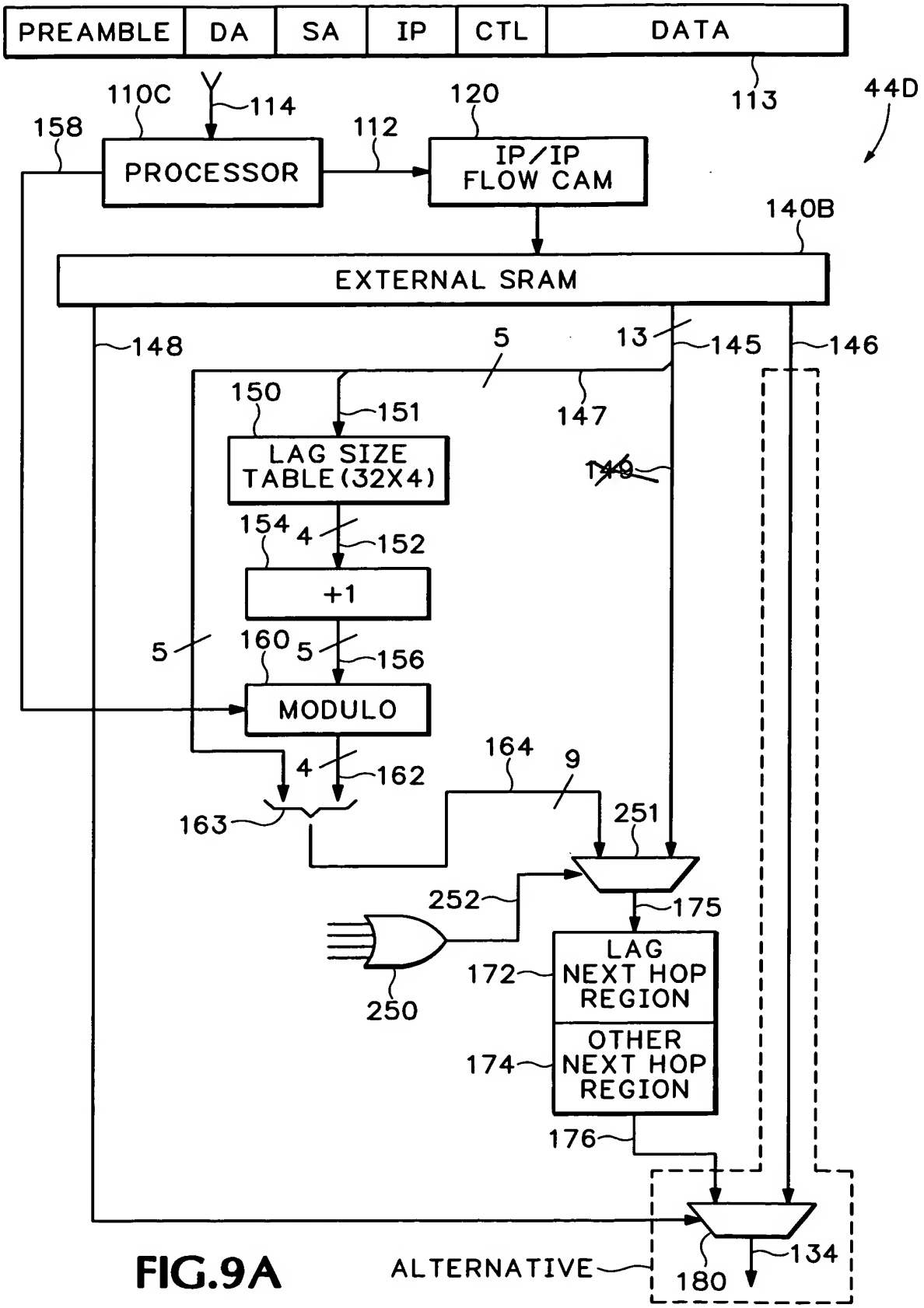

PREAMBLE
DA
SA
IP
CTL
DATA
113
44D
110C
114
158
112
120
PROCESSOR
IP/IP
FLOW CAM
140B
EXTERNAL SRAM
148
5
13
145
146
150
151
147
LAG SIZE
TABLE(32X4)
154
4
152
+1
5
160
5
156
MODULO
4
162
164
9
163
251
252
175
250
172
LAG
NEXT HOP
REGION
174
OTHER
NEXT HOP
REGION
176
ALTERNATIVE
180
134

FIG.9A

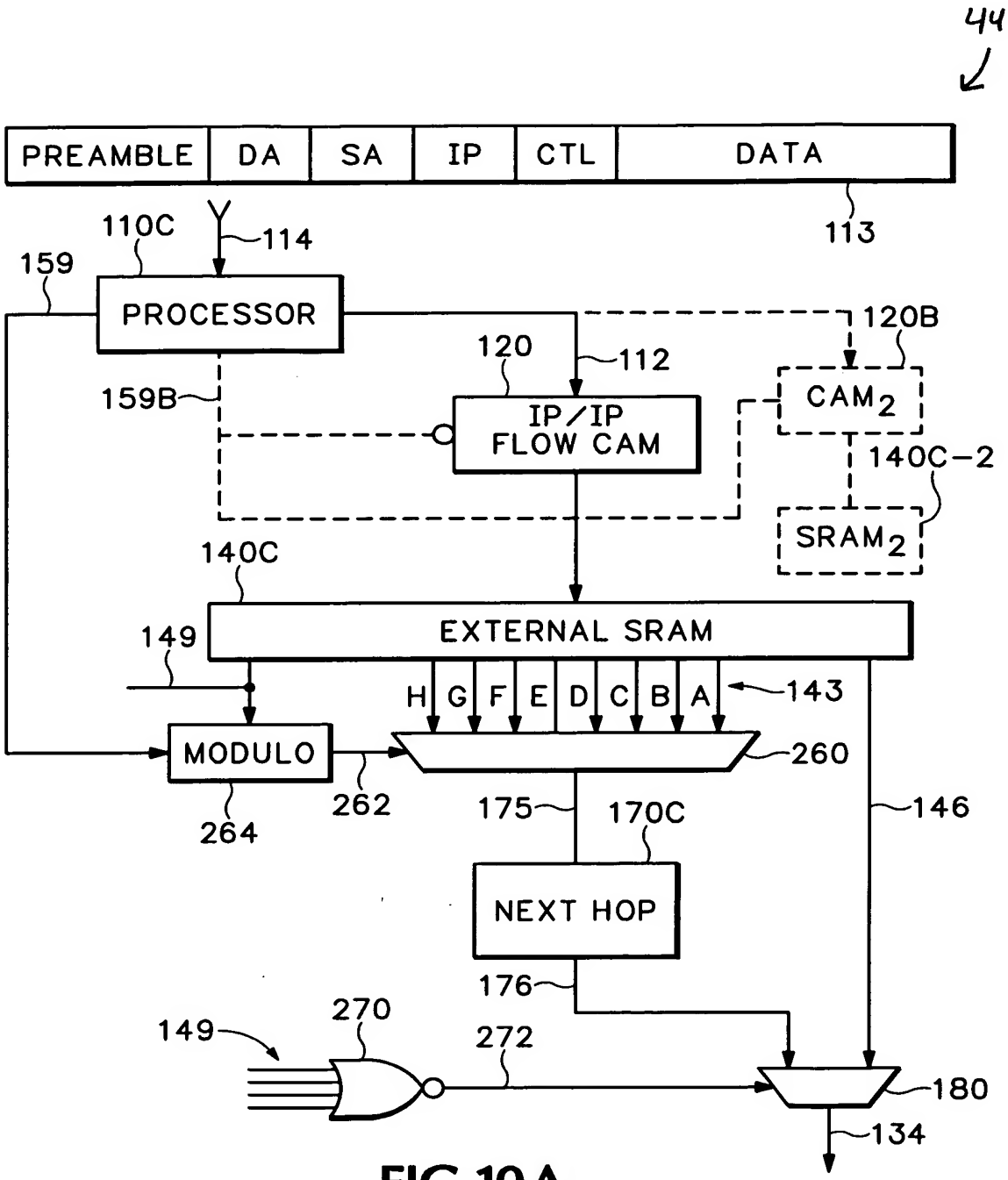

44E
PREAMBLE
DA
SA
IP
CTL
DATA
113
110C
114
159
PROCESSOR
120B
120
112
159B
IP/IP
FLOW CAM
CAM2
140C-2
SRAM2
140C
149
EXTERNAL SRAM
H
G
F
E
D
C
B
A
143
MODULO
260
264
262
175
170C
146
NEXT HOP
176
270
149
272
180
134

FIG.10A